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# FINANCING OPERATIONS FOR COFFEE COMMERCIALIZATION ON THE COVID-19 PANDEMIC PERIOD: ANALYSIS ON BRAZILIAN COFFEE PRODUCERS

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## ABSTRACT

Currently, the coffee consumption has grown exponentially around the world. According to the Brazilian Coffee Industry Association – ABIC's report (2020), coffee is an agricultural product of great importance for the Brazilian's and also to the local industry.According to the United States Department of Agriculture –USDA (2020), Brazil is leader in coffee production, including diverse and variant coffees.The consumption figures showed that, despite the economic crisis generated by the pandemic period, which affected several sectors in 2020, the demand for coffee continued its growth rate. The demand was 1.34% higher than the same period analyzed in the previous year. While rising demand offers unprecedented opportunities to growers, they also have to live up to a growing set of challenges. Many are confronted with inadequate access to credit and high price volatility. This quantitative study used a structured questionnaire and the SPSS software to process the data obtained from coffee producers. It is noticed that after a year of pandemic, the search for coffee has grown. However, the lack of better management in the marketing process can bring some obstacles for entrepreneurs in this sector. A better understanding of financing and commercial processes can contribute to the strengthening of business for coffee producers.



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# INTRODUCTION

Coffee consumption has grown exponentially across the world (SCA, 2017; Carvalho *et al*., 2018). According to the Brazilian's Coffee Industry Association - ABICReport (2020), coffee is an agricultural product of great importance for Brazilians and also for the domestic industry. Despite the economic crisis generated by the pandemic period, which affected several sectors in 2020, the consumption shows that the demand for coffee continued its growth rate: 1.34% increase compared to the same period analyzed in the previous year. The numbers collected by ABIC (2020), also revealed that Brazil maintained its position as the second largest coffee consumer in the world in 2019. In addition, data from the latest survey carried out by Euromonitor, in 2019, highlight Brazil as the largest world market in total volume of coffee as a hot beverage.

Based on the International Coffee Organization Report (2021), the global coffee consumption for coffee year 2020/21 is estimated at 167.15 million bags, an increase of 1.9% over 164.02 million bags recorded in coffee year 2019/20. Moreover, the average price of October 2021 is the highest since the mark of 182.29 US cents/lb recorded in February 2012. 2021, according to the report. Intra-day volatility of the ICO composite indicator price recorded in February 2012. Although coffee prices continued to increase, volatility weakened in October 2021, according to the report. Intra-day volatility of the ICO composite indicator price increased by 0.1 percentage points to 8.3% in October 2021. The Brazilian Naturals indicator showed a volatility of 10.7% in October 2021, as compared to 10.5% in September 2021. Beside to these data, the specialty coffee has gained immense popularity for its unique flavor and improved quality. There are large varieties of coffee trending every

day due to the widened demand (Raveendram & Murthy, 2021). According to the United States Department of Agriculture –USDA (2020), Brazil is leader in coffee production, including diverse and variant coffees. Several researchers who study agricultural policy in Brazil report that one of the main challenges for the Brazilian's agribusiness feasibility involves solving the problem of financing production (Reis, 2019). This occurs mainly for small and medium agricultural producers. Even with the great importance of Brazil in the coffee market, there are few studies about the use of *Barter*by coffeeproducers. Therefore, this study aims to contribute to the literature by understanding some commercial linkages in the coffee market. In this scope, it is proposed a quantitative descriptive study with coffee agents located in regions that have tradition in the production of this commodity. Moreover, there is little information about the coffee marketing chain dynamics during the COVID-19 pandemic period. Although the economics of commodity markets have received considerable research attention recently, some important questions remain unanswered, notably those related to the empirical examination of what motivates various market participants (Bosch & Smimou, 2021). Studies that examine specifics sector can reveal important intuitions (Acharya *et al*., 2013; Klomp, 2020). Due to the fact that financial fundamentals have a significant impact on the commodities trading activities, it was proposed in the paper a survey research to be applied in the coffee marketing chain, in order to obtain data and information about commercial and financial strategies by coffee producers. In this paper, variables related to financial and commercial issues were used to verify the respondents' perception and level of agreement regarding contractual relationships, possible exchange mechanisms with other agents (with or without the involvement of capital), as well as to verify whether the target audience seeks financing outside the traditional financial system (e.g. Banks and Financial Institutions). Therefore, the empirical examination aims to highlight the percepcions and trading strategies used by Brazilian coffee producers. Furthermore, information about market scenarios,during the effects of the COVID-19 pandemic,might highlight visionsand economic interests.

## THEORETICAL FRAMEWORK

***Financing in Brazilian Agribusiness:*** The financial markets play a critical role in promoting economic growth in developing countries. Therefore, farmers who are exposed to grain price volatility take out loans to purchase the inputs needed for production (Skrastins, 2021). Based on the agricultural policy report, researchers point out that the main challenge for the Brazilian agribusiness feasibility involves solving the financing problem. There was a time that the Federal Government was the main financer, in addition to promoting agricultural activities in the country (Reis, 2019). In addition, the Brazilian agricultural sector has always undergone transformations, mainly in the last twenty years when the process of introducing technology and financial resources in the field allowed for an increase in production and productivity. This reality had consequences for small rural producers. Some consequences are described as follow: (i) an increase in the need for money for the small farmers due to the occupation of large areas of land by agribusiness agriculture; (ii) dependence of the small producer on the use of agricultural inputs; (iii) and the involvement of the small producer in the agribusiness production system (Oliveira, 2015). According to Reis (2019), in 1965 the National System of Rural Credit (SNCR) was created by the Law 4829/65, which had among its main objectives the function of stimulating the increase of rural investments in storage, industrialization, production and commercialization costs of agricultural products. The logic of these instruments was to provide resources to finance agribusiness. At the same time, these instruments aim at short and medium-term credit, mainly for the costing and marketing of agricultural products (Schouchana, 2013). However, with the weakening of the SNCR over time, the market agents started to look for alternative financing solutions (Reis, 2019). Regarding contractual issues, the firm might be viewed as a relationship between agents that takes place through contracts (Coase, 1937), whether explicit or implicit (informal partnership). From Coase's perspective, the firm can be viewedas a set of coordinated contracts that lead to the execution of the productive function (Zylbersztajn, 2000).

***Barter:*** Although money plays a key role in modern economies, an increasing amount of business is being done without the use of money (Kaikati&Kaikati, 2013). In *Barter* transactions, each side wants the specific goods the other side offers, the persons exchanging goods may be total strangers to one another, and the terms of trade are determined by familiar supply and demand forces, both parties to the transaction seeking to economize or maximize, to receive the most for what they pay (Dalton, 1982). O'Sullivan&Sheffrin (2003), defined *Bartering* as a system of a direct exchange of goods or services for othergoods or services without using a medium of exchange (money, for example). *Barter* is a type of counterpart in a commercial transaction (Pank *et al*., 1994).*Barter*is also considered a process constructed to maintain trade volumes and balance them, whilemaximizing the utility of participants (Bieniek,2021). Kaikati & Kaikati (2013), emphasizes that global *Barter* transactions have great importance on the total value of worldwide business transactions.Reis (2019) defines *Barter* as the exchange of inputs for agricultural production, normally acquired before planting, for use in agricultural production itself, with payment to be made after the harvest, using it as a currency trading. Business practice also suggests that moneyless marketplace exchanges have thriving in today's economy (Kaikati & Kaikati, (2013). These authors sheded light on the important role of cashless deals in today's economy.Kaikati & Kaikati (2013), defined cashless deals as economic transactions involving the exchange of goods and/or services without the use of money. These nonmonetary marketplace exchanges have clear economic implications. In difficult economic times in particular, cashless deals tend to experience a renaissance. Some of the economic effect of barter concentrates on the liquidity problem, capitalist economic crisis reduction, market segmentation and price discrimination, and negotiations(Bieniek, 2021).

The term *Barter*, which has english origin,means two very different kinds of transactions: moneyless market exchange (market exchangein kind), and moneyless exchange of *any* sort (Dalton, 1982). In this article, *Barter* has the meaning moneyless market exchange. Dalton (1982) stated that: like market exchanges carried out with money, market exchanges in kind (*barter*) are also purchase or sale transactions. In this sense, the goods exchanged and the terms of trade are of central importance, rather than the relationship between the parties exchanging.*Barter* credit protects, for example, the price risk for farmers' produce. Since price fluctuation is an important risk in agriculture, hedging mitigates price risk and reduces the probability of default due to unfavorable price developments (Skrastins, 2021). In the agribusiness sector the *Barter* operation represents a consistent crop financing mechanism with the acquisition of inputs (Reis, 2019). According to Johann *et al* (2015), exchange or *barter* operations are negotiation instruments that are gaining more and more relevance in agribusiness. The exchange operations are generally instruments of negotiation that make it possible to finance production by rural producers who face financial difficulties. Therefore, with *Barter's* operation, rural producers who face difficulties in obtaining credit can have easier access, for example, to production inputs (seeds, pesticides and fertilizers). Consequently, many organizations commercialize inputs through commercial exchanges using their productions, that is, bags of coffee.Finally, it is worth to highlight the need for studies on the use of *Barter* in domestic trading situations. Due to the growing pressures for cost reduction for firms, purchasing professionals need to be creative and find new ways to control the costs incurred by their companies (Plank *et al*., 1994).

# METHODOLOGY

This paper is characterized as exploratory, mainly because there is little information about the coffee marketing chain dynamics during the COVID-19 pandemic period, and it has a descriptive research. According to Lamb *et al*. (2019), the descriptiveresearch, by far the

more common type of conclusive research used in business, attempts to describe marketing phenomena and characteristics (e.g., surveys). The quantitative data collection method chosen was the survey research.Therefore, a survey research was applied in order to obtain data and information about commercial and financial strategies used bycoffee producers. According to Dantas & Lima (2018), when we want to measure market segments and pre-existing qualitative information, we may use a research with quantitative approach. This research approach makes use of pre-elaborated questionnaires, allowing a quantitative evaluation of the data collected. Therefore, to carry out a survey with coffee producers, a structured questionnaire was applied. The questionnaire design included two types of questions: closed-ended questions and scaled-response questions (Likert scales). The use of mobile marketing research have created a greater focus on conducting marketing research by using customers' mobile devices. In this sense, researchers might develop applications that can be downloaded by respondents, which can allow for participation in surveys (Lamb *et al*., 2019). Following this trend, the questionnaire was prepared within the Google platform, and was sent for convenience throughout social network *Whatsapp* to coffee producers. The questionnaire was applied between March, 2021 and April, 2021. It is noteworthy that it was relevant to the research to collect data through the application of the questionnaire in the period considered, since the COVID-19 pandemic has been ongoing in Brazil for more than a year.Once decided how to collect primary data, the next step was to select the sampling procedures to use. The type of nonprobability sample used was the convenience sample, where the researcher selects the easiest population members from which to obtain information (Lamb *et al*., 2019). The convenience samplewas selected due to the coffee producers readily accessible. The researchers also took into account the following factors to select the target audience: (1) producers who have a high quality standard of coffee; (2) growers that produce specialty coffees; (3) producers that export or those with potential to prospect foreign markets.

For data analysis, some multivariate techniques were used, such as Cluster and Discriminant Analysis for the segmentation of respondents, based on demographic variables, variables associated with rural properties, as well as the variables described as follow. According to Hair Jr. *et al*. (2014), the multivariate analysisrefers to all statistical techniquesthat simultaneously analyze multiple measurements on individuals or objects under investigation. Cluster analysis was used to characterize the respondents according to the variables selected on this paper. The primary goal of Cluster analysis is to partition a set of objects into two or more groups based onthe similarity of the objects for a set of specified characteristics (Hair Jr. *et al*, 2014). Based on the authors, as *profile analysis,* discriminant analysis provides an objective assessment of differences between groups on a set of independent variables. According to Malhotra (2011), cross-tabulation describes two or more variables simultaneously. This kind of Table reflects the joint contribution of the researched variables. The cross-tabulation is widely used in marketing research, since the cross-tabulation analysis and results can be easily interpreted and understood. Thus, this technique was used to analyze the following variables with the three groups identified in the research: (1) use of a long-term contract fixed in US dollar to sale coffee, (2) contracts for coffee sale indexed to the Real (RS), (3) financing search from coffee producers outside the conventional financial system (e.g. Banks and Financial Institutions), (4) exchange operations with other firms (*Barter*), and (5) exchange operations with other firms, with the involvement of capital. To analyze the research results, the Statistical Package Software for Social Science for Windows (SPSS) was used, which, according to Meirelles (2014), is a statistical software that allows the use of data in different formats to generate reports, calculate descriptive statistics, conduct complex statistical analyses, and draw graphs.

# RESULTS AND DISCUSSION

***Sample profile:*** The survey participants have the following characteristics shown in the Table below:

As shown in Table 1, the survey had 33 respondents, twenty two men (66.7%) and eleven women (33.3%). Most of the respondents are between 51 and 60 years old, corresponding totwelve respondents. However, the interval between 41 and 60 years is equivalent to 63.7% of the sample, considering the valid cumulative percentage.

**Table 1. Profile of survey respondents (*N* = 33)**

| Measure | Item | *N* | % |
|---|---|---|---|
| Gender | Male | 22 | 66.7 |
| | Female | 11 | 33.3 |
| Age | 18-30 years | 4 | 12.1 |
| | 31-40 years | 4 | 12.1 |
| | 41-50 years | 9 | 27.3 |
| | 51-60 years | 12 | 36.4 |
| | > 60 years | 4 | 12.1 |
| Education level | Basic education | 1 | 3.0 |
| | High school | 1 | 3.0 |
| | Technical - High School | 3 | 9.1 |
| | Gradutate level | 12 | 36.4 |
| | Postgradutate level | 16 | 48.5 |
| Family Income | < 5 wages | 4 | 12.1 |
| | 6-10 wages | 10 | 30.3 |
| | 11-15 wages | 9 | 27.3 |
| | 16-30 wages | 6 | 18.2 |
| | > 30 wages | 4 | 12.1 |
| Field Time (working with coffee) | 0-10 years | 12 | 36.4 |
| | 11-20 years | 7 | 21.2 |
| | 21-30 years | 7 | 21.2 |
| | > 30 years | 7 | 21.2 |

Source: From authors (2021)

About the level of education, sixteen respondents have Postgraduate level. (48.5%), followed by twelve respondents (36.4%) that have Graduate degree. Regarding to the monthly family income, most of respondents reported having up to five minimum wages, corresponding to forty-two respondents (52.5%). Ten growers have between six and ten wages.

***Locations of respondents' rural properties***

**Table 2. Regions of respondents' rural properties (*N*=33)**

| Region | Frequency | % |
|---|---|---|
| Sul de Minas Gerais-MG | 20 | 60.6 |
| Cerrado-MG | 4 | 12.1 |
| Campos das Vertentes-MG | 2 | 6.1 |
| Mantiqueira-MG | 2 | 6.1 |
| Zona da Mata-MG | 2 | 6.1 |
| Matas de Minas-MG | 1 | 3.0 |
| MogianaPaulista-SP | 1 | 3.0 |
| Others | 1 | 3.0 |
| TOTAL | 33 | 100.0 |

Source: From authors (2021)

The structured questionnaire was sent to coffee producers living in different parts of the country. However, it can be seen (see, Table 2) that most respondents are in regions belonging toMinas Gerais State.The selection of coffee producerson this paper is explained in the methodology section.

***Group's definition (Segments of coffee producers):*** The procedure for choosing the number of groups (*Clusters*) was important in the sense of portraying similar characteristics of coffee producers segments. Thus, the result obtained was based on a grouping technique used by researchers in the field of Administration.With the support of the Statistical Package for Social Sciences (SPSS), the respondents were analyzed in order to achieve the proposed objective in the survey. The *clusters* identified as suiTable for the analysis of this work were subdivided into three groups (segments), considering a sample of thirty-three respondents. Thus, the participants were allocated as follows: "*Cluster* 1" with nine producers, "*Cluster* 2" with ten respondents and "*Cluster 3*" with fourteen producers.

***Cluster 1:*** When performing the analysis using some multivariate techniques (*Cluster* and Discriminant Analysis), it was found that *Cluster* 1 has the following characteristics: nine respondents, where there is a balance between men (5 respondents) and women (4 respondents). In addition, there is a predominance age between forty-one and fifty years, corresponding to 44.4% of the total number of respondents, followed by people aged between fifty-one and sixty years, equivalent to 22.2%. The education level in this group is high (66.7% of respondents have a postgraduate degree). Furthermore, 33% respondents have an average income between six to tenwages, while 22.2% have a monthly family income between sixteen to thirtywages. Fiveproducers, which is equivalent to 55.6% of the total respondents, own a property with a total area of more than fifty hectares, and five respondents (55.6%) are located in the southern region of Minas Gerais State, while two respondents are located in the Cerrado Mineiro region.

**Cross-tabulation of "*Cluster 1*" with somevariables:** This section refers to the cross-tabulation of some variables with *Cluster 1*, carried out individually. The first variables were associated with the topic "Contracts for coffeesale". The following variables are related to the topic "Financing or exchanges between actors in the coffee marketing chain".The following Table is related to the respondents' level of agreement with the following statement: "Coffee producers search financing outside the traditional financial system". The Table 6 has to do with whether or not "exchange operations" (*Barter*) are carried out by coffee producers with other organizations. The following Table identifies the respondents' level of agreement regarding the following statement: "Exchange operations with other firms (with the involvement of capital) help producers in their business".

**Table 3. Cross-tabulation of the variable "Contract 1" – Has long-term Contracts fixed in US dollars with "Cluster 1"**

| Variable "Contract 1" | *Cluster* 1 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 2 | 22.2% |
| No | 6 | 66.7% |
| Has no knowledge | 1 | 11.1% |
| TOTAL | 9 | 100% |

Source: From authors (2021)

**Table 4. Cross-tabulation of the variable "Contract 2" – PreferContractsindexed to Real (R$) with "*Cluster 1*"**

| Variable "Contract 2" | *Cluster* 1 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 3 | 33.4% |
| No | 4 | 44.4% |
| Has no knowledge | 2 | 22.2% |
| TOTAL | 9 | 100% |

Source: From authors (2021)

**Table 5. Cross-tabulation of the variable "Financing" – Financing search outside the conventional financial system with "*Cluster 1*".**

| Variable "Financing - outside the conventional financial system" | *Cluster* 1 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 0 | 0% |
| Somewhat Disagree | 0 | 0% |
| Neither Disagree nor Agree | 5 | 55.6% |
| Somewhat Agree | 3 | 33.3% |
| Definitely Agree | 1 | 11.1% |
| TOTAL | 9 | 100% |

Source: From authors (2021)

**Table 6. Cross-tabulation of the variable "exchange operations with other Firms (*Barter*)" with "*Cluster* 1"**

| Variable "Exchange operations with other firms (*Barter*) " | *Cluster* 1 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 9 | 100.0% |
| No | 0 | 0% |
| TOTAL | 9 | 100% |

Source: From authors (2021)

**Table 7. Cross-tabulation of the variable "Exchange operations with other firms, with capital involvement" with "*Cluster* 1".**

| Variable "Exchange operations with other firms, with capital involvement" | *Cluster* 1 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 0 | 0% |
| Somewhat Disagree | 1 | 11.1% |
| Neither Disagree nor Agree | 2 | 22.2% |
| Somewhat Agree | 4 | 44.5% |
| Definitely Agree | 2 | 22.2% |
| TOTAL | 9 | 100% |

Source: From authors (2021)

***Cluster 2***

The "*Cluster 2*" has the following characteristics: ten respondents, where there is a predominance of male respondents (80%). Moreover, the predominant age in this group is between fifty-one and sixty years old (40%), followed by the producers that have above 60 years old (three respondents). The education level in this group is higher (90% of the respondents have postgraduate and graduate degrees). In addition, 60% of respondents have an average income between eleven to fifteen wages, while 20.0% have a monthly family income between six to tenwages. Fifty per cent of respondents, taking into account the cumulative percentage, own a property with a total area between eleven and thirty hectares. Furthermore, seven respondents (70%) are located in the southern region of Minas Gerais State, while two respondents are in the region of Mantiqueira-MG.Regarding the time of experience as coffeeproducers, there is a balance between the ranges presented in the questionnaire: 30% (three respondents) said they had between eleven and twenty years of experience in the rural area, 30% reported having twenty one to thirty years of experience in the sector, and other three respondents said they are over thirty years working as coffee producers.

**Cross-tabulation of "*Cluster 2*" with some variables:** It this section some tables are presented referring to the cross-tabulation, carried out individually, by variables associated to "Contracts for coffee commercialization" with respondents belonging to "*Cluster 2*".

**Table 8. Cross-tabulation of the variable "Contract 1" – Has long-term Contracts fixed in US dollars with "*Cluster* 2".**

| Variable "Contract 1" | *Cluster* 2 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 0 | 0% |
| No | 8 | 80.0% |
| Has no knowledge | 2 | 20.0% |
| TOTAL | 10 | 100% |

Source: From authors (2021)

**Table 9. Cross-tabulation of the variable "Contract 2" – Prefer Contracts indexed to Real (R$) with "*Cluster*2".**

| Variable "Contract 2" | *Cluster* 2 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 3 | 30.0% |
| No | 2 | 20.0% |
| Has no knowledge | 5 | 50.0% |
| TOTAL | 10 | 100% |

Source: From authors (2021)

The tables below are related to variables associated with the topic "Financing or exchanges between actors in the coffee marketing chain". Just like the "*Cluster* 1", the variables were analyzed individually. That is, cross-tabulations of variables were performed with the frequency of respondents belonging to "*Cluster* 2".

The Table 11 refers to whether or not "exchange operations" (*Barter*) are carried out by coffee producers with other organizations. The following Table aims to verify the respondents' level of agreement regarding the following statement: "Exchange operations with other firms (with the involvement of capital) help producers in their business":

**Table 10. Cross-tabulation of the variable "Financing" – financing search outside the conventional financial system with "*Cluster* 2"**

| Variable "Financing - outside the conventional financial system" | *Cluster* 2 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 1 | 10.0% |
| Somewhat Disagree | 1 | 10.0% |
| Neither Disagree nor Agree | 6 | 60.0% |
| Somewhat Agree | 2 | 20.0% |
| Definitely Agree | 0 | 0% |
| TOTAL | 10 | 100% |

Source: From authors (2021)

**Table 11. Cross-tabulation of the variable "exchange operations with other Firms (*Barter*)" with "*Cluster*2"**

| Variable "Exchange operations with other firms (*Barter*) " | *Cluster* 2 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 3 | 30.0% |
| No | 7 | 70.0% |
| TOTAL | 10 | 100% |

Source: From authors (2021)

**Table 12. Cross-tabulation of the variable "Exchange operations with other firms, with capital involvement" with "*Cluster*2".**

| Variable "Exchange operations with other firms, with capital involvement" | *Cluster* 2 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 0 | 0% |
| Somewhat Disagree | 0 | 0% |
| Neither Disagree nor Agree | 3 | 30.0% |
| Somewhat Agree | 6 | 60.0% |
| Definitely Agree | 1 | 10.0% |
| TOTAL | 10 | 100% |

Source: From authors (2021)

***Cluster* 3:** The "*Cluster* 3" has the following characteristics: nine respondents are male, which corresponds to 64.3% of the total number of respondents. In "*Cluster* 3" there are six respondents between fifty-one to sixty years old (42.9%), followed by producers aged between forty-one to fifty years old (three respondents), equivalent to 21.4%. The education level of this group is high (42.9% of respondents have a postgraduate degree) and 35.7% of respondents (the equivalent of five respondents) have a Graduate degree. According to the monthly average income, 35.7% of respondents have an average income between six to tenwages, while 21.4% have a monthly family income between eleven to fifteenwages. In addition, eight respondents (equivalent to 57.1% of the total respondents), own a property with a total area of more than 50 hectares, and eight respondents (57.1%) are located in the Southern region of Minas Gerais State, while two respondents (the equivalent to 14.3% of the total respondents) are located in the Cerrado Mineiro region.

**Table 13. Cross-tabulation of the variable "Contract 1" – Has long-term Contracts fixed in US dollars with "*Cluster* 3"**

| Variable "Contract 1" | *Cluster* 3 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 3 | 21.4% |
| No | 11 | 78.6% |
| Has no knowledge | 0 | 0% |
| TOTAL | 14 | 100% |

Source: From authors (2021)

**Table 14. Cross-tabulation of the variable "Contract 2" – PreferContracts indexed to Real (R$) with "*Cluster* 3"**

| Variable "Contract 2" | *Cluster* 3 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 9 | 64.3% |
| No | 3 | 21.4% |
| Has no knowledge | 2 | 14.3% |
| TOTAL | 14 | 100% |

Source: From authors (2021)

**Table 15. Cross-tabulation of the variable "Financing" – financing search outside the conventional financial system with "*Cluster* 3"**

| Variable "Financing - outside the conventional financial system" | *Cluster* 3 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 1 | 7.1% |
| Somewhat Disagree | 0 | 0% |
| Neither Disagree nor Agree | 5 | 35.7% |
| Somewhat Agree | 5 | 35.7% |
| Definitely Agree | 3 | 21.4% |
| TOTAL | 14 | 100% |

Source: From authors (2021)

**Cross-tabulation of "*Cluster* 3" with some variables:** This section presents tables referring to cross-tabulations, carried out individually, using variables associated with respondent's contracts frequency for coffee sale, belonging to "*Cluster* 3".

**Table 16. Cross-tabulation of the variable "exchange operations with other Firms (*Barter*)" with "*Cluster* 3".**

| Variable "Exchange operations with other firms (*Barter*) " | *Cluster* 3 (No. of respondent) | Valid % |
|---|---|---|
| Yes | 11 | 78.6% |
| No | 3 | 21.4% |
| TOTAL | 14 | 100% |

**Source:** From authors (2021)

The tables below refer to the Cross-tabulation of "*Cluster* 3" with some variables selected for the research purpose. The Table 15 is related to a question asked to verify the respondents' level of agreement regarding the following statement: "Coffee producers search for financing outside the traditional financial system". The Table 16 refers to whether or not "exchange operations" (*Barter*) are carried out by coffee producers with other firms. The following Table aims to verify the respondents' level of agreement regarding the following statement: "Exchange operations with other firms (with the involvement of capital) help producers in their business"

**Table 17. Cross-tabulation of the variable "Exchange operations with other firms,with capital involvement" with "*Cluster* 3"**

| Variable "Exchange operations with other firms, with capital involvement" | *Cluster* 3 (No. of respondent) | Valid % |
|---|---|---|
| Definitely Disagree | 2 | 14.3% |
| Somewhat Disagree | 2 | 14.3% |
| Neither Disagree nor Agree | 1 | 21.4% |
| Somewhat Agree | 3 | 7.1% |
| Definitely Agree | 6 | 42.9% |
| TOTAL | 14 | 100% |

**Source:** From authors (2021)

## FINAL REMARKS

Based on the data collected, it is clear the relevance of this type of market research, which involves topics that still lack research and studies (either quantitative or qualitative studies approaches). In this context, themes like"contractual forms for the commercialization of coffee and other Brazilian agribusiness crops","questions about financing outside traditional financial institutions", as well as "exchange operations with or without capital involvement (e.g. *Barter*), aim to help growers in the production and marketing processes of their agricultural products. After describing the groups (*Clusters*) researched in this paper, it can be stated that producers belonging to "*Cluster* 1" has a higher income when compared to "*Cluster* 2", although similar to "*Cluster* 3". Moreover, members from "*Cluster 1*", in general, have the following characteristics: (i) they use few contracts,(ii) those producers are interested in financing outside the traditional financial system, (iii) they have larger rural areas, (iv) and carry out exchange operations, withthe trend to use operations without capital involvement. "*Cluster* 2", in turn, has a median family's income when compared to "*Cluster 1*" and "*Cluster*

*3*". Producers from "*Cluster 2*" have the following characteristics: (i) they also use few contracts, (ii) this group of coffee producers behaves indifferently with regard to financing outside the financial system, (iii) respondents are located in different regions, such asthe region of Mantiqueira-MG, (iv) and most respondents agreeded that exchange operations, with the involvement of capital, help farmers in the marketing process of their coffee. Members belonging to "*Cluster 3*" have a certain similarity to producers from'*Cluster*1". Producers from "*Cluster* 3" have the following characteristics: (i) the producers from "*Cluster* 3" deal more with contracts indexed to the Real (R$), (ii) it is a group that hasa higher percentage of women respondents, (iii) those coffee producers have large rural properties, (iv) in this group there are respondents from the Cerrado-MG region and mainly from the Southern region of Minas Gerais State, (v) 60% of this group showed interest in searching financing outside the traditional financial system, (vi) andit was also noted that this Group has a high rate of access to exchange operations (*Barter* operations), without the involvement of capital. Finally, further quantitative research with other variables might be suggested, taking into account areas such as logistics and foreign trade with specialty coffees, in order to better understand this variety, which is gaining increasing importance in profiTable markets for Brazilian coffee growers.

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